Standards Change Request
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2006 April 6

Summary

This SCR proposes adding the value "ENVI" to the list of values for the keyword HEADER_TYPE. An ENVI header is a short text file that describes an image. The header is used by ENVI image processing software (Research Systems Inc, www.rsinc.com/envi) to read in the image.

Urgency

The urgency is moderate. The Geosciences Node is currently preparing to archive a data set of airborne LIDAR images of Earth targets. The images have ENVI headers that the data provider would like to include in the archive. It is possible that MRO CRISM archives would include ENVI header files if that option becomes available.

Current Standard

The current values for HEADER_TYPE are BDV, FITS, SPREADSHEET, TEXT, VICAR, and VICAR2. The standard value type is DYNAMIC.

Proposed change

Add ENVI to the list of standard values for HEADER_TYPE.

Rationale

ENVI software is a commonly-used tool in the image processing community. The presence of an ENVI header file is a convenience for the ENVI user, making it possible to easily read in a PDS image. ENVI headers are generated automatically by ENVI software. An ENVI header has the same name as the image file it describes, with the extension .HDR.

Impact

Since the ENVI header is stored as a separate text file, it has no impact on the image file itself. An ENVI header can be created for any PDS image. The presence of the header file does NOT mean that ENVI software is required to read the image; it just makes it easier for ENVI to read it.

Here's an example of a label for an image file accompanied by an ENVI header.

```
PDS_VERSION_ID            = PDS3
RECORD_TYPE               = FIXED_LENGTH
RECORD_BYTES              = 4448
FILE_RECORDS              = 833

^HEADER                   = "MYIMAGE.HDR"
^IMAGE                    = "MYIMAGE.IMG"
...
```

```
OBJECT                    = HEADER
  HEADER_TYPE             = "ENVI"
  INTERCHANGE_FORMAT      = "ASCII"
  RECORDS                 = "N/A"   /* not needed because the header     */
  BYTES                   = "N/A"   /* is stored in a separate file      */
  DESCRIPTION             = "This text file can be used by ENVI image
     processing software to read in the image."
END_OBJECT                = HEADER

OBJECT                    = IMAGE
  LINES                   = 1112
  LINE_SAMPLES            = 833
  SAMPLE_TYPE             = IEEE_REAL
  SAMPLE_BITS             = 32
  DESCRIPTION             = "..."
END_OBJECT                = IMAGE
END
```

Here are the contents of the ENVI header file in the above example.

```
ENVI
description = {
  Image Gridded from Irregular set of points [Thu Oct 20 11:30:49 2005]}
samples = 1112
lines   = 833
bands   = 1
header offset = 0
file type = ENVI Standard
data type = 4
interleave = bsq
sensor type = Unknown
byte order = 1
map info = {UTM, 1.500, 1.500, 537198.159, 4133790.168, 2.0000000000e+00, 2.0000000000e+00, 11,
North, WGS-84, units=Meters}
wavelength units = Unknown
```
